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DEPARTMENT OF ENERGY

Supplement to the Draft Environmental Impact Statement for a Geologic Repository for the Disposal of Spent Nuclear Fuel and High-Level Radioactive Waste at Yucca Mountain, Nye County, Nevada

AGENCY: Department of Energy (DOE).

ACTION: Notice of availability and opportunity for comment.

SUMMARY: The Department of Energy (DOE) announces the availability of a Supplement to the Draft Environmental Impact Statement for a Geologic Repository for the Disposal of Spent Nuclear Fuel and High-Level Radioactive Waste at Yucca Mountain, Nye County, Nevada (Draft EIS) (DOE/EIS-0250D-S). The Department has prepared this Supplement in accordance with the Nuclear Waste Policy Act of 1982, as amended (NWPA), the National Environmental Policy Act of 1969, as amended (NEPA), the Council on Environmental Quality regulations that implement the procedural provisions of NEPA, and the DOE procedures implementing NEPA. The Council on Environmental Quality NEPA regulations state that an agency may prepare a supplement when it determines that the purposes of NEPA will be furthered by doing so. As anticipated, design enhancements of the proposed repository at Yucca Mountain have evolved since DOE issued the Draft EIS in August 1999. Accordingly, DOE has issued a Supplement to the Draft EIS to address the most recent information on design evolution,

including enhancements in design details and operating modes, and associated potential environmental impacts. DOE will provide the public an opportunity to comment on the Supplement and conduct hearings on the Supplement, as described below.

DATES: Comments on the Supplement to the Draft EIS will be accepted during a 45-day public comment period, which ends on June 25, 2001. DOE will consider comments submitted after June 25, 2001, to the extent practicable.

ADDRESSES: DOE will conduct public hearings on the Supplement in Amargosa Valley, Las Vegas, and Pahrump, Nevada. Public hearing locations and further details are provided below in this Notice under "Public Hearings and Invitation to Comment."

Written comments and requests for further information on the Supplement to the Draft EIS or the public hearings, and requests for copies of the document and included CD-ROM should be directed to: Dr. Jane Summerson, EIS Document Manager, M/S 010, U.S. Department of Energy, Office of Civilian Radioactive Waste Management, Yucca Mountain Site Characterization Office, P.O. Box 30307, North Las Vegas, Nevada 89036-0307, Telephone 1-800-967-3477, Facsimile 1-800-967-0739.

Written comments via facsimiles should include the following identifier: "Yucca Mountain Supplement to the Draft EIS." Addresses and locations where the Supplement will be available for public review are listed in this Notice under "Availability of the Supplement to the Draft EIS."

Electronic Format: Internet

Written comments on or requests for copies of the document may also be submitted over the Internet via the Yucca Mountain Project website at <http://www.ymp.gov>, under the listing "Environmental Impact Statement."

FOR FURTHER INFORMATION CONTACT: Dr. Jane Summerson, EIS Document Manager, M/S 010, U.S. Department of Energy, Office of Civilian Radioactive Waste Management, Yucca Mountain Site Characterization Office, P.O. Box 30307, North Las Vegas, Nevada 89036-0307, Telephone 1-800-967-3477, Facsimile 1-800-967-0739.

For general information on the DOE NEPA process, contact: Ms. Carol M. Borgstrom, Director, Office of NEPA Policy and Compliance (EH-42), U.S. Department of Energy, 1000 Independence Ave., SW., Washington, DC 20585, Telephone 1-202-586-4600, or leave a message at 1-800-472-2756.

SUPPLEMENTARY INFORMATION: In August 1999, DOE issued the Draft Environmental Impact Statement for a Geologic Repository for the Disposal of Spent Nuclear Fuel and High-Level Radioactive Waste at Yucca Mountain, Nye County, Nevada (Draft EIS), in accordance with the National Environmental Policy Act of 1969, as amended (42 U.S.C. 4321 *et seq.*), and the Nuclear Waste Policy Act, as amended (42 U.S.C. 10101 *et seq.*). The U.S. Environmental Protection Agency (EPA) issued a Notice of Availability (64 FR 44217) of the Draft EIS on August 13, 1999, initiating a public comment period that ended on February 28, 2000. During the 199-day comment period, DOE held 21 public hearings across the United States. The Draft EIS describes the Proposed Action to construct, operate and monitor, and eventually close a geologic repository for the disposal of spent nuclear fuel and high-level radioactive waste at Yucca Mountain. The Draft EIS also describes the potential environmental impacts associated with the Proposed Action.

For the Draft EIS, DOE based the analysis on the repository design described in the Viability Assessment of a Repository at Yucca Mountain. The Draft EIS discussed ongoing evaluations that could result in modifications to that design.

As DOE anticipated in the Draft EIS, repository design has continued to evolve. Although the fundamental aspects of the repository design have not changed from those discussed in the Draft EIS, design options and operating modes (ways in which to operate the repository) are being explored to reduce uncertainties and improve long-term repository performance and operational safety and efficiency. DOE has documented the evolution to date of its design efforts in the Yucca Mountain Science and Engineering Report: Technical Information Supporting Site Recommendation Consideration (YMS&ER), which describes the current design (which the Supplement calls the S&ER flexible design) and a range of possible repository operating modes. The YMS&ER also summarizes current technical information that the Secretary of Energy will use to determine whether to recommend approval of the Yucca Mountain site to the President for development as a repository.

Evaluations are underway to analyze the effect of various operating modes on repository performance. The flexible design discussed in the YMS&ER includes the ability to operate the repository in a range of operating modes that address higher and lower temperatures and associated humidity

conditions. The higher-temperature operating mode means that at least a portion of the emplacement drift rock wall would have a maximum temperature above the boiling point of water at the elevation of the repository [96°C (205°F)]. Examples of the lower-temperature operating modes include conditions under which the drift rock wall temperatures would be below the boiling point of water, and conditions under which the waste package surface temperature would not exceed 85°C (185°F). To bound the impact analysis, DOE considered conditions under which the rock wall temperatures would be above the boiling point of water, and conditions under which waste package surface temperatures would not exceed 85°C.

DOE prepared the Supplement to update information presented in the Draft EIS. The Supplement evaluates potential environmental impacts that could occur, based on the design options and range of possible operating modes presented in the YMS&ER. The Supplement compares the impacts associated with the S&ER flexible design to the impacts presented in the Draft EIS.

The basis for the analytical scenarios presented in the Draft EIS was the amount of commercial spent nuclear fuel and its associated thermal output or load that DOE would emplace per unit area of the repository (called areal mass loading). In the Draft EIS, DOE evaluated three thermal load scenarios including high thermal load, a relatively high emplacement density of commercial spent nuclear fuel (85 metric tons of heavy metal (MTHM) per acre), intermediate thermal load (60 MTHM per acre), and low thermal load (25 MTHM per acre). The analytical scenarios described in the Draft EIS were not intended to place a limit on the choices among alternative designs because DOE expected that the repository design would continue to evolve. Rather, DOE selected these scenarios to represent the range of foreseeable design features and operating modes and to ensure that it considered the associated range of potential environmental impacts.

In contrast to focusing on thermal loads, the S&ER flexible design focuses on controlling the temperatures of the rock between the drifts, the waste package surfaces, and the drift walls to meet thermal management goals established for possible repository operating modes. To meet these thermal goals, the S&ER flexible design uses a linear thermal load (heat output per unit length of the emplacement drift) and emplaces waste packages relatively